

Patent claims

1. Gradient coil system of a magnetic resonance apparatus in which at least one part of an electrical conductor arrangement of the gradient coil system is  
5 produced via action of a radiation (in particular laser radiation) on a metal powder sinter material.
2. Gradient coil system according to claim 1, whereby the metal powder sinter material is a copper powder or aluminum powder.
- 10 3. Gradient coil system according to any of the claims 1 or 2, whereby the conductor arrangement is cast with epoxy resin, in particular together with insulation and/or cooling devices of the gradient coil system.
- 15 4. Gradient coil system according to any of the claims 1 through 3, whereby the conductor arrangement is fashioned at least in part as a hollow conductor arrangement for conveyance of a coolant medium.
- 20 5. Method for the production of a gradient coil system according to any of the claims 1 through 4, whereby the conductor arrangement is produced in that the metal powder sinter material successively applied in layers is solidified per layer by means of the radiation at the points of the conductor arrangement.
- 25 6. Method according to claim 5, whereby a three-dimensional design plan that is partitioned into the layers is provided for the conductor arrangement.
7. Method according to one of the claims 5 or 6, whereby at least one web that can be removed layer is sintered as well between parts of the conductor arrangement, in particular sub-coils that are free of an electrical connection within  
30 the gradient coil system.

8. Method according to any of the claims 5 through 7, whereby at least one adjustment element is sintered as well that effects an automatic adjustment for an insertion of the conductor arrangement into a casting mold with a corresponding counterpart.

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9. Method according to any of the claims 5 through 8, whereby the conductor arrangement is cast together with at least one insulation and/or cooling device.